

ABSTRACT OF THE DISCLOSURE

100687-00032

A fast mechanical shutter for a laser has a reflective flag which either blocks or unblocks the laser output. In the blocking position, the flag reflects the light onto a laser output absorber. The flag is rapidly moved by an electric actuator into which

5 shaped current pulses are forced to determine the velocity, acceleration, deceleration and position of the flag. Absent a current pulse, the flag remains in its extant position. Sensors detect and produce an error signal if (i) the flag is in a selected position or(ii) if the actuator or the laser overheat. The error signal moves the flag to its blocking position, terminates laser operation and produces an alarm. Exemplary

10 actuators include rotary actuators, such as solenoids and AC or DC motors that can be rapidly operated by shaped current pulses. A computer may direct the operation of the shutter and the laser.